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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/783,217	02/15/2001	Fumikazu Shimoshikiyo	4034-23	2792
23117	7590	04/20/2004	EXAMINER	
NIXON & VANDERHYE, PC			PARKER, KENNETH	
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ARLINGTON, VA 22201-4714			2871	

DATE MAILED: 04/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/783,217

Applicant(s)

SHIMOSHIKIRYO, FUMIKAZU

Examiner

Kenneth A Parker

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 January 2004.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 11-17 and 19-35 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☒ Claim(s) 17 and 19-32 is/are allowed.
6) ☒ Claim(s) 1-9, 11-16 and 33-35 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:

- ☒ Certified copies of the priority documents have been received.
- ☐ Certified copies of the priority documents have been received in Application No. _____.
- ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/20/2004.

- 4) ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date. 4/15/2004.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Application/Control Number: 09/783,217
Art Unit: 2871

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3-8, and 33-35 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Koma et al 5608556.

Claims 1 is written to a liquid crystal display device, comprising a first substrate, a second substrate and a liquid crystal layer interposed between the first substrate and the second substrate, wherein: a plurality of picture element regions are provided each of which is defined by a first electrode provided on one side of the first substrate which is closer to the liquid crystal layer and a second electrode provided on the second substrate so as to oppose the first electrode via the liquid crystal layer; the liquid crystal layer is a vertical alignment type liquid crystal layer containing a liquid crystal material having a negative dielectric anisotropy; and each of the plurality of picture element regions includes at least one orientation-regulating region, the orientation-regulating region including a first region in which an electric field applied across the liquid crystal layer by the first electrode and the second electrode has a first electric field strength, a second region in which the electric field has a second electric field strength which is smaller than the first electric field strength, and a third region in which the electric field has a third electric field strength which is smaller than the second electric field strength, wherein the first, second and third regions are arranged in this order in a predetermined direction.

Claims 9 is written to a liquid crystal display device, comprising a first substrate, a second substrate and a liquid crystal layer interposed between the first substrate and the second substrate, wherein: a plurality of picture element regions are provided each of which is defined by a first electrode provided on one side of the first substrate which is closer to the liquid crystal layer and a second electrode provided on the second substrate so as to oppose the first electrode via the liquid crystal layer; the liquid crystal layer is a vertical alignment type liquid crystal layer containing a liquid crystal material having a negative dielectric anisotropy; and each of the plurality of picture element regions includes at least one orientation-regulating region, the orientation-regulating region including a first region in which the first electrode and the second electrode have a first inter-electrode distance therebetween, a second region in which the first electrode and the second electrode have a second inter-electrode distance therebetween which is greater than the first inter-electrode distance, and a third region in which the first electrode and the second electrode have a third inter-electrode distance therebetween which is greater than the second inter-electrode distance, wherein the first, second and third regions are arranged in this order in a predetermined direction.

Claim 17 is written to a liquid crystal display device, comprising a first substrate, a second substrate and a liquid crystal layer interposed between the first substrate and the second substrate, wherein: a plurality of picture element regions are provided each of which is defined by a first electrode provided on one side of the first substrate which is closer to the liquid crystal layer and a second electrode provided on the second substrate so as to oppose the first electrode via the liquid crystal layer; the liquid crystal layer is a vertical alignment type liquid crystal layer containing a liquid crystal material having a negative dielectric anisotropy; the first electrode includes a lower conductive layer, a dielectric layer covering the lower conductive layer, and an upper conductive layer provided on one side of the dielectric layer which is closer to the liquid crystal layer; the upper conductive layer includes an upper layer opening for each of the plurality of picture element regions, and the lower conductive layer includes a lower layer opening for each of the plurality of picture element regions; and each of the plurality of picture element regions includes at least one orientation-regulating region, the orientation-regulating region including a first region in which the liquid crystal layer is arranged between the upper conductive layer of the first electrode and the second electrode, a second region in which the liquid crystal layer and the dielectric layer located within the upper layer opening are arranged between the lower conductive layer of the first electrode and the second electrode, and a third region in which the liquid crystal layer and the dielectric layer located within the upper layer opening are arranged between the lower layer opening of the first

electrode and the second electrode, wherein the first, second and third regions are arranged in this order in a predetermined direction.

The regions of Koma include a pixel window and extra electrodes with windows (see figure 5). These structures produce regions which can be found to have at least three regions across any line across the device (for example, going from left to right or right to left). They create multiple different voltage regions- in fact, a continuum of voltage regions and therefore the middle "states" can be considered regions. Therefore, these claims are anticipated by the reference.

Regarding the dependent claims:

Claims 3 and 11 have each of the plurality of picture element regions includes a plurality of orientation-regulating regions, the plurality of orientation-regulating regions having the same direction of arrangement of the first, second and third regions. (inherently met)

Claims 4-8, 12-15 have each of the plurality of picture element regions includes a first orientation-regulating region in which the first, second and third regions are arranged in this order in a first direction, and a second orientation-regulating region in which the first, second and third regions are arranged in this order in a second direction which is different from the first direction, and different arrangements on how this is ordered. As coma has 4 areas at 90 degrees, all of the arrangements are met by the reference.

Claims 1, 3-8, 9, 11-16 and 33-35 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Suzuki et al 6256082.

The regions of Suzuki include a pixel window and extra electrodes with windows (see figures 1-2). These structures produce regions which can be found to have at least three regions across any line across the device (for example, going from left to right or

Art Unit: 2871

right to left. They create multiple different voltage regions- in fact, a continuum of voltage regions and therefore the middle "states" can be considered regions. As Suzuki has pixels that must have pixel edges, the edge region of the pixel (or off the pixel) will meet this language. Therefore, these claims are anticipated by the reference.

Regarding the dependent claims:

Claims 2, 19 and 10 have a boundary between the first region and the second region and a boundary between the second region and the third region extend in a direction perpendicular to the predetermined direction (inherently met)

Claims 3 and 11 have each of the plurality of picture element regions includes a plurality of orientation-regulating regions, the plurality of orientation-regulating regions having the same direction of arrangement of the first, second and third regions. (also inherently met)

Claims 4-8, 12-15 have each of the plurality of picture element regions includes a first orientation-regulating region in which the first, second and third regions are arranged in this order in a first direction, and a second orientation-regulating region in which the first, second and third regions are arranged in this order in a second direction which is different from the first direction, and different arrangements on how this is ordered. As coma has 4 areas at 90 degrees, all of the arrangements are met by the reference.

Allowable Subject Matter

Claims 17 and 19-32 are allowed.

Election/Restrictions

Linking claim 17 is allowed. Since the restriction requirement I inventions II, as set forth in the paper mailed 3/11/2003 was conditioned on the nonallowance of the

Application/Control Number: 09/783,217
Art Unit: 2871

linking claim(s), **the restriction requirement as to the linked inventions is hereby withdrawn.** Claim 32, previously withdrawn from consideration as a result of the restriction requirement, is hereby rejoined and fully examined for patentability under 37 CFR 1.104. In view of the withdrawal of the restriction requirement as to the linked inventions, applicant(s) are advised that if any claim(s) depending from or including all the limitations of the allowable linking claim(s) be presented in a continuation or divisional application, such claims may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application. Once the restriction requirement is withdrawn, the provisions of 35 U.S.C. 121 are no longer applicable. See *In re Ziegler*, 44 F.2d 1211, 1215, 170 USPQ 129, 131-32 (CCPA 1971). See also MPEP § 804.01.

Response to Arguments

Applicant's arguments filed have been fully considered but they are not persuasive.

Regarding claim 1, the voltages at an opening are continuously varying, and therefore create a continuous line of linear regions at either side of the window and within the window itself (re Koma. Claim 9 has three separate regions listed, indicating that the language involving the spacing between the electrodes must be read to have the off angle distance in the area between pixels included. As Suzuki has pixels that must have pixel edges, the edge region of the pixel (or off the pixel) will meet this language.

Conclusion

Applicant's submission of an information disclosure statement under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on 1/20/2004 prompted the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 609(B)(2)(i). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

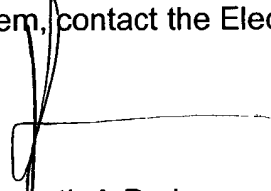
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth A Parker whose telephone number is 571-272-2298. The examiner can normally be reached on M-F 10:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on 571-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kenneth A Parker
Primary Examiner
Art Unit 2871